AMENDMENTS TO THE CLAIMS

Please accept amended Claims 1-4, 6-8, 13, 16 and 17 as follows:

1. (Currently Amended) A method for eliminating or reducing an unwanted signal from a recorded mixture of a desired signal and an unwanted signal given ~~an original~~ a recording of the unwanted signal without the desired signal, comprising:

aligning the recorded mixture and the ~~original~~ recording of the unwanted signal without the desired signal;

computing a time-frequency representation of the recorded mixture to create a time-frequency recorded mixture;

computing a time-frequency representation of the redefined ~~original~~ recording of the unwanted signal to create a time-frequency redefined ~~original~~ recording of the unwanted signal;

determining a segment of time when only the redefined ~~original~~ recording of the unwanted signal is present in the recorded mixture;

computing a value $\alpha(\omega)$, wherein $\alpha(\omega)$ is a modulus of a Widrow-Hoff estimate;

generating a time-frequency mask using the value $\alpha(\omega)$, the time-frequency recorded mixture and the time-frequency redefined ~~original~~ recording of the unwanted signal;

applying the time-frequency mask on the recorded mixture to compute a time-frequency desired signal; and

inverting the time-frequency desired signal to create a desired signal.

2. (Currently Amended) The method of claim 1, wherein aligning the recorded mixture and the ~~original~~ recording of the unwanted signal comprises:

estimating a delay between the recorded mixture and the ~~original~~ recording of the unwanted signal; and

redefining the ~~original~~ recording of the unwanted signal with respect to a delay between the recorded mixture and the ~~original~~ recording of the unwanted signal to create a redefined ~~original~~ recording of the unwanted signal;

3. (Currently Amended) The method of claim 2, wherein estimating a delay between the recorded mixture and the ~~original~~ recording of the unwanted signal comprises manually estimating the delay through optical inspection.

4. (Currently Amended) The method of claim 2, wherein estimating a delay between the recorded mixture and the ~~original~~ recording of the unwanted signal comprises performing cross-correlation alignment.

5. (Original) The method of claim 1, wherein computing a time-frequency representation of the recorded mixture to create a time-frequency recorded mixture comprises computing

$$F^{W}(x(\cdot))(t,\omega)=\frac{1}{\sqrt{2\pi}}\int_{-\infty}^{\infty}W(\tau-t)x(\tau)e^{-i\omega\tau}d\tau.$$

6. (Currently Amended) The method of claim 1, wherein computing a time-frequency representation of the redefined ~~original~~ recording of the unwanted signal to create a time-

frequency redefined ~~original~~ recording of the unwanted signal comprises computing

$$F^{W}(x(\cdot))(t,\omega)=\frac{1}{\sqrt{2\pi}}\int_{-\infty}^{\infty}W(\tau-t)x(\tau)e^{-i\omega\tau}\,d\tau.$$

7. (Currently Amended) The method of claim 1, wherein determining a segment of time when only the redefined ~~original~~ recording of the unwanted signal is present in the recorded mixture comprises determining a segment of time when the desired signal is not of a sufficient auditory level to be heard by a human.

8. (Currently Amended) The method of claim 1, wherein determining a segment of time when only the redefined ~~original~~ recording of the unwanted signal is present in the recorded mixture comprises determining a segment of time when the desired signal is not present in the mixture.

9. (Currently Amended) The method of claim 1, wherein computing a value $\alpha(\omega)$

$$\alpha(\omega)=\frac{\int_{\in(t_0,t_1)}\left|\hat{x}(t,\omega)\overline{\hat{r}_0(t,\omega)}\right|\,dt}{\int_{\in(t_0,t_1)}\left|\hat{r}(t,\omega)\right|^2\,dt}$$

comprises computing

wherein $\hat{x}(t,\omega)$ is a windowed Fourier transform, and

$\hat{r}(t,\omega)$ is a filter process.

10. (Original) The method of claim 1, wherein computing a value $\alpha(\omega)$ comprises setting the value $\alpha(\omega)$ to 1.

11. (Original) The method of claim 1 wherein computing a value $\alpha(\omega)$ comprises computing adaptive updates to the value $\alpha(\omega)$.

12. (Original) The method of claim 1, wherein generating a time-frequency mask using the time-frequency recorded mixture and the time-frequency redefined original recording comprises computing

$$m(t,\omega)=\begin{cases}1 & if \quad \dfrac{|\tilde{x}(t,\omega)|^2}{a^2(\omega)|\hat{r}(t,\omega)|^2}>\alpha\\ 0 & if \quad otherwise\end{cases}.$$

13. (Currently Amended) The method of claim 1, wherein generating a time-frequency mask using the time-frequency recorded mixture and the time-frequency redefined ~~original~~ recording of the unwanted signal comprises computing $m(t,\omega)=1_{\left\{\frac{|\tilde{x}(t,\omega)|}{|\tilde{r}_2(t,\omega)|}>\alpha\right\}}$, wherein $|\tilde{r}_2(t,\omega)|$ is estimated from $r_2(t)$ and wherein $r_2(t)$ is a rerecording of the original recording in a similar environment and setup as the recorded mixture.

14. (Original) The method of claim 1, wherein generating a time-frequency mask using the time-frequency recorded mixture and the time-frequency redefined original recording comprises computing $m(t,\omega)=1_{\{a(\omega)|\hat{r}_0(t,\omega)|>\beta\}}$.

15. (Original) The method of claim 1, wherein inverting the time-frequency desired signal to create a desired signal comprises computing an inverted

$$F^{W}(x(\cdot))(t,\omega)=\frac{1}{\sqrt{2\pi}}\int_{-\infty}^{\infty}W(\tau-t)x(\tau)e^{-i\omega\tau}d\tau.$$

16. (Currently Amended) A machine-readable medium having instructions stored thereon for execution by a processor to perform a method for eliminating or reducing an unwanted signal from a recorded mixture of a desired signal and an unwanted signal given ~~an original~~ a recording of the unwanted signal without the desired signal, comprising:

aligning the recorded mixture and the ~~original~~ recording of the unwanted signal without the desired signal;

computing a time-frequency representation of the recorded mixture to create a time-frequency recorded mixture;

computing a time-frequency representation of the redefined original recording to create a time-frequency redefined original recording;

determining a segment of time when only the redefined original recording is present in the recorded mixture;

computing a value $\alpha(\omega)$, wherein $\alpha(\omega)$ is a modulus of a Widrow-Hoff estimate;

generating a time-frequency mask using the time-frequency recorded mixture and the time-frequency redefined original recording;

applying the time-frequency mask on the recorded mixture to compute a time-frequency desired signal; and

inverting the time-frequency desired signal to create a desired signal.

17. (Currently Amended) A method for eliminating or reducing an unwanted signal from a recorded mixture of a desired signal and an unwanted signal given ~~an original~~ a recording of the unwanted signal without the desired signal, comprising:

aligning the recorded mixture and the ~~original~~ recording of the unwanted signal without the desired signal;

computing a time-scale representation of the recorded mixture to create a time-scale recorded mixture;

computing a time-scale representation of the redefined original recording to create a time-scale redefined original recording;

determining a segment of time when only the redefined original recording is present in the recorded mixture; computing a value $\alpha(\omega)$, wherein $\alpha(\omega)$ is a modulus of a Widrow-Hoff estimate;

generating a time-scale mask using the value $\alpha(\omega)$, the time-scale recorded mixture and the time-scale redefined original recording;

applying the time-scale mask on the recorded mixture to compute a time-scale desired signal; and

inverting the time-scale desired signal to create a desired signal.